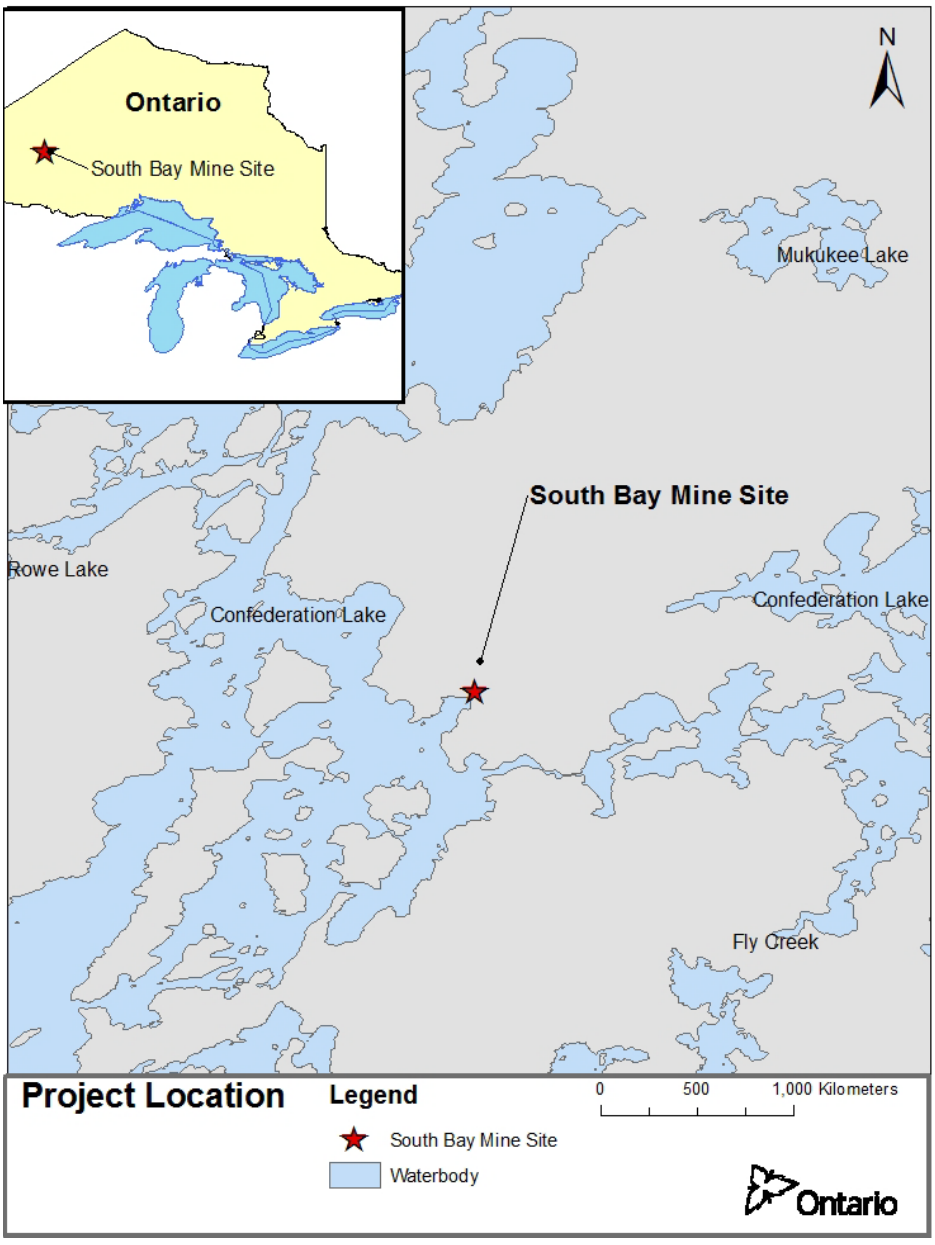
Project Description: South Bay Mine Rehabilitation Project

BACKGROUND:

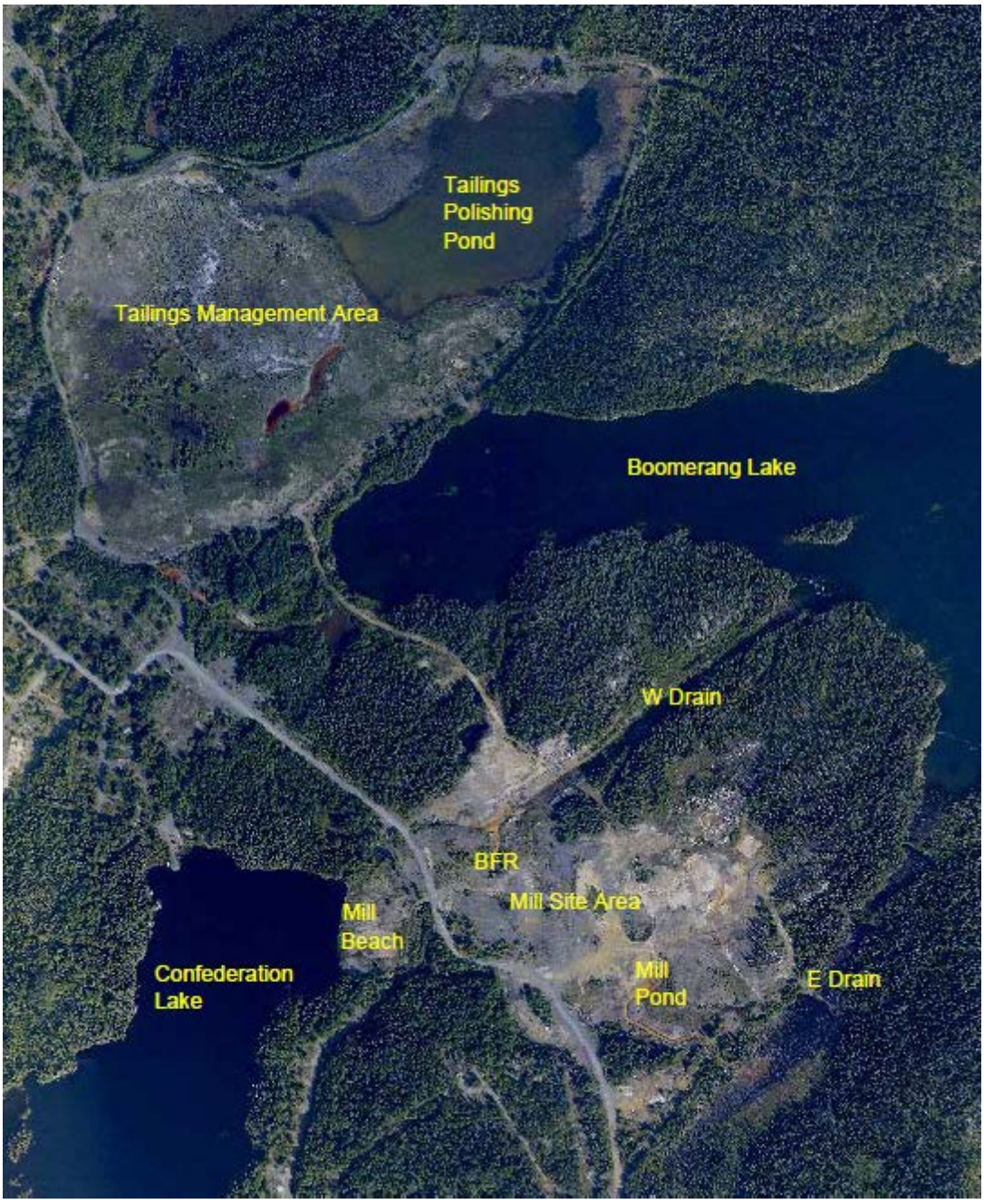
The South Bay Mine is located approximately 75 km northeast of Ear Falls on the east side of Confederation Lake (Figure 1).

Figure 1: Location



The South Bay Mine was an underground copper/zinc mine which operated from 1971 to 1981. Approximately 1,266,000 tonnes of ore was mined. This created 760,000 tonnes of mine tailings which are now located in a tailings management area that is approximately 25 hectares in size (see Figure 2).

Figure 2: Site Plan (2010)



The former mill site area, which is next to the tailings management area, is approximately 10 hectares in size. When the mine was in operation the mill site area contained a head frame, mill concentrator, warehouse and mill pond (see Figure 2 and 3).

Figure 3: Historic Aerial View of South Bay Mine Site (from 1971 Selco Report)

During the 1980s the owner of the mine site removed all surface infrastructure (buildings, power lines, and pipelines). Access points to the underground workings were capped or backfilled. A vegetative cover was grown over the tailings management area. These rehabilitation measures were as per the standards at that time.

The ownership of the mine site returned to the Crown around the year 1990. Over the next 12 years, attempts by a private sector company to address the poor quality of the site were unsuccessful.

The ore from the mine contained sulphide minerals which produces sulphuric acid when it is exposed to air and water. The acidic runoff from the mill area and the tailings management area carries the dissolved metals into the adjacent water-bodies including Confederation Lake.

PROPOSED REHABILITATION OPTIONS:

MNDM has evaluated a variety of alternative methods to rehabilitate the mine site. MNDM is proposing a preferred option, which would be to cap the mill site and tailings management area with a low-permeability material. The proposed cap would minimize water infiltration from rainfall and snow melt and reduce acid runoff from the tailings.

This proposed method is dependent upon having enough aggregate material near the site to construct the cap. If there is not enough aggregate, an alternative rehabilitation option is to move the tailings to Boomerang Lake. When submerged in water, sulphide minerals no longer produce sulphuric acid. There

is currently no aquatic life within Boomerang Lake due to the lake having been previously used to treat seepage from the mill and tailings area.

PROPOSED SCHEDULE

The detailed engineering for the proposed project is tentatively scheduled to begin in 2015. Rehabilitation of the site could begin as early as the fall of 2016, depending on the rehabilitation method.